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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/779,443

02/13/2004

Peter Kurczynski

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12/20/2005

LUCENT TECHNOLOGIES INC.

DOCKET ADMINISTRATOR

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EXAMINER

AMARI, ALESSANDRO V

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/779,443

Applicant(s)

KURCZYNSKI ET AL.

Examiner

Alessandro V. Amari

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-26 is/are pending in the application.
- 4a) Of the above claim(s) 19-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-18 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 19-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Power of Attorney

1. The Revocation of Power of Attorney filed on 19 October 2005 shows an incorrect customer number. The customer number is shown as "46860" whereas it should be shown as "46850". A corrected Power of Attorney needs to be filed.

Election/Restrictions

2. Newly submitted claims 19-25 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 7-18 and 26, drawn to a deformable mirror device, classified in class 359, subclass 846.
- II. Claims 19-25, drawn to a method of fabricating a deformable mirror device, classified in class 359, subclass 900.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be formed by a process wherein the deformable layer, support structure and electrode layers are formed, attached and disposed in a different sequence than that claimed.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention ^{of group I (the deformable mirror device)}, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 19-25 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Objections

3. The claims are objected to because the lines are crowded too closely together, making reading difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 7-13 and 26 are rejected under 35 U.S.C. 102(a) as being anticipated by Kurczynski et al US 6,639,710.

In regard to claim 7, Kurczynski et al teaches (see Figures 3-5) a device, comprising a deformable layer (301, 401), said deformable layer supported on a first substrate (303, 403) and adapted to move with respect to said first substrate; and first (307, 503) and second (302, 501) electrode layers disposed in proximity to the deformable layer, wherein the deformable layer is located between the first and second electrode layers and is physically separated from each of the first and second electrode layers by a respective opening as shown in Figures 3-5 and each of the first and second electrode layers enables motion of the deformable layer with respect to the first substrate as described in column 4, lines 10-31.

Regarding claim 8, Kurczynski et al teaches that the first electrode layer is adapted to transmit light as shown in Figure 3; a surface of the deformable layer is adapted to reflect light; and the light received and reflected by the surface passes through the first electrode layer as described in column 4, lines 10-31, column 5, lines 29-67 and column 6, lines 1-3.

Regarding claim 9, Kurczynski et al teaches that the displacement of the deformable layer with respect to a rest position enabled by the first electrode layer is in a substantially opposite direction to displacement of the deformable layer with respect to said rest position enabled by the second electrode layer as described in column 4, lines 10-31, column 5, lines 29-67 and column 6, lines 1-3 and as shown in Figure 3.

Regarding claim 10, Kurczynski et al teaches that each of the first and second electrode layers is adapted to be electrically biased with respect to the deformable layer as described in column 4, lines 10-31, column 5, lines 29-67 and column 6, lines 1-3.

Regarding claim 11, Kurczynski et al teaches that the first and second electrode layers are adapted to be electrically biased with respect to the deformable layer independent of each other as described in column 4, lines 10-31 and as shown in Figure 3.

Regarding claim 12, Kurczynski et al teaches that if an electrode in the first electrode layer is electrically biased with respect to the deformable layer, an electrostatic force produced due to the bias between said electrode and the deformable layer causes the deformable layer to move toward the first electrode layer, thereby changing shape of the deformable layer as described in column 4, lines 10-31 and as shown in Figure 3.

Regarding claim 13, Kurczynski et al teaches that if an electrode in the second electrode layer is electrically biased with respect to the deformable layer, an electrostatic force produced due to the bias between said electrode and the deformable layer causes the deformable layer to move toward the second electrode layer, which further changes the shape of the deformable layer as described in column 4, lines 10-31 and as shown in Figure 3.

In regard to claim 26, Kurczynski et al teaches (see Figure 3-5) a device comprising deformable means (301, 401) for reflecting light, said deformable means supported on means for supporting (303, 403) and adapted to move with respect to said means for supporting as shown in Figure 3; and first (307, 503) and second (302, 501) means for deforming said deformable means for reflecting light wherein the deformable means for reflecting light is located between the first and second means for deforming and is physically separated from each of the first and second means for deforming by a

respective opening as shown in Figures 3-5; and each of the first and second means for deforming enables motion of the deformable means for reflecting light with respect to the means for supporting as described in column 4, lines 10-31.

6. Claims 7-13 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurczynski et al US 6,639,710.

In regard to claim 7, Kurczynski et al teaches (see Figures 3-5) a device, comprising a deformable layer (301, 401), said deformable layer supported on a first substrate (303, 403) and adapted to move with respect to said first substrate; and first (307, 503) and second (302, 501) electrode layers disposed in proximity to the deformable layer, wherein the deformable layer is located between the first and second electrode layers and is physically separated from each of the first and second electrode layers by a respective opening as shown in Figures 3-5 and each of the first and second electrode layers enables motion of the deformable layer with respect to the first substrate as described in column 4, lines 10-31.

Regarding claim 8, Kurczynski et al teaches that the first electrode layer is adapted to transmit light as shown in Figure 3; a surface of the deformable layer is adapted to reflect light; and the light received and reflected by the surface passes through the first electrode layer as described in column 4, lines 10-31, column 5, lines 29-67 and column 6, lines 1-3.

Regarding claim 9, Kurczynski et al teaches that the displacement of the deformable layer with respect to a rest position enabled by the first electrode layer is in a substantially opposite direction to displacement of the deformable layer with respect to

said rest position enabled by the second electrode layer as described in column 4, lines 10-31, column 5, lines 29-67 and column 6, lines 1-3 and as shown in Figure 3.

Regarding claim 10, Kurczynski et al teaches that each of the first and second electrode layers is adapted to be electrically biased with respect to the deformable layer as described in column 4, lines 10-31, column 5, lines 29-67 and column 6, lines 1-3.

Regarding claim 11, Kurczynski et al teaches that the first and second electrode layers are adapted to be electrically biased with respect to the deformable layer independent of each other as described in column 4, lines 10-31 and as shown in Figure 3.

Regarding claim 12, Kurczynski et al teaches that if an electrode in the first electrode layer is electrically biased with respect to the deformable layer, an electrostatic force produced due to the bias between said electrode and the deformable layer causes the deformable layer to move toward the first electrode layer, thereby changing shape of the deformable layer as described in column 4, lines 10-31 and as shown in Figure 3.

Regarding claim 13, Kurczynski et al teaches that if an electrode in the second electrode layer is electrically biased with respect to the deformable layer, an electrostatic force produced due to the bias between said electrode and the deformable layer causes the deformable layer to move toward the second electrode layer, which further changes the shape of the deformable layer as described in column 4, lines 10-31 and as shown in Figure 3.

In regard to claim 26, Kurczynski et al teaches (see Figure 3-5) a device comprising deformable means (301, 401) for reflecting light, said deformable means

supported on means for supporting (303, 403) and adapted to move with respect to said means for supporting as shown in Figure 3; and first (307, 503) and second (302, 501) means for deforming said deformable means for reflecting light wherein the deformable means for reflecting light is located between the first and second means for deforming and is physically separated from each of the first and second means for deforming by a respective opening as shown in Figures 3-5; and each of the first and second means for deforming enables motion of the deformable means for reflecting light with respect to the means for supporting as described in column 4, lines 10-31.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurczynski et al US 6,639,710 in view of Stappaerts US 6,791,735.

Regarding claims 14-18, Kurczynski teaches the invention as set forth above and regarding claims 14 and 16, (see Figure 3) teaches that the device comprises a support structure formed using the first substrate and each of the first electrode layer and the deformable layer is attached to the support structure is supported on the first substrate as described in column 3, lines 17-26, and regarding claim 17, that the first substrate comprises at least first and second layers, the deformable layer is a part of the first layer as described in column 3, lines 17-26 and regarding claim 18, teaches that (see Figure

3) the first electrode layer is supported on the first substrate as described in column 3, lines 17-26 and that the first electrode layer is adapted to transmit light and the surface of the deformable layer is adapted to transmit light and each of the first and second electrode layers is adapted to be electrically biased with respect to the deformable layer, wherein displacement of the deformable layer with respect to a rest position produced due to a bias applied to the first electrode layer is in a substantially opposite direction to displacement of the deformable layer with respect to the rest position produced due to a bias applied to the second electrode layer as described in column 4, lines 10-31.

However, regarding claims 14, 15 and 18, Kurczynski et al does not teach a support structure including first and second substrates and the electrode layers are supported on the first and second substrates and that the first and second substrates are attached together to form an integrated package.

Regarding claim 14, Stappaerts teaches (see Figure 4) that the second electrode layer (401) is supported on a second substrate (402).

Regarding claim 15, Stappaerts teaches that the first and second substrates are attached to form an integrated package as shown in Figure 4.

Regarding claim 18, Stappaerts teaches (see Figure 4) that the second electrode layer (401) is supported on a second substrate (402) wherein the first and second substrates are attached together to form an integrated package as shown in Figure 4.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the second substrate of Stappaerts into the

deformable mirror device of Kurczynski et al in order to support the second electrode layer of Kurczynski et al and to thus offer a more stable platform for the device for improved operating reliability.

Response to Arguments

9. Applicant's arguments with respect to claims 7-18 and 26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (571)


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272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ava *AM*
14 December 2005


MARK A. ROBINSON
PRIMARY EXAMINER